HOME MAINTENANCE & REPAIR: A REFERENCE MANUAL FOR HOMEOWNERS

Alberta
MUNICIPAL AFFAIRS
Innovative Housing Grants Program

HOME MAINTENANCE AND REPAIR -
A REFERENCE MANUAL FOR HOMEWONERS

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The views and conclusions expressed and the recommendations made in this report are entirely those of the authors and should not be construed as expressing the opinions of Alberta Municipal Affairs.

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FOREWORD

The project documented in this report received funding under the Innovative Housing Grants Program of the Alberta Department of Housing. In May, 1986 the Alberta Department of Housing was amalgamated with Alberta Municipal Affairs which is now responsible for issuing this report.

The Innovative Housing Grants Program is intended to encourage and assist housing research and development which will reduce housing costs, improve the quality and performance of dwelling units and subdivisions, or increase the long term viability and competitiveness of Alberta's housing industry.

The Program offers assistance to builders, developers, consulting firms, professionals, industry groups, building products manufacturers, municipal governments, educational institutions, non-profit groups and individuals. At this time, priority areas for investigation include building design, construction technology, energy conservation, site and subdivision design, site servicing technology, residential building product development or improvement and information technology.

As the type of project and level of resources vary from applicant to applicant, the resulting documents are also varied. Comments and suggestions on this report are welcome. Please send comments or requests for further information to:

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1 INTRODUCTION

1. INTRODUCTION

1.1. OBJECTIVES AND SCOPE

This study has been undertaken to develop a Homeowner's Manual to assist Alberta's single-family homeowners in the maintenance and upgrading of their homes.

The Homeowner's Manual is intended to provide a framework to assist the homeowner in establishing priorities for home maintenance and upgrading. It is not intended to provide detailed instructions on how to undertake specific repairs, as such instructions are already available in a wide variety of Government and privately published literature. This document will include references that the reader is encouraged to consult.

The scope of the project is limited to typical single-family homes which were built in Alberta between 1900 and 1971. Dwellings built prior to 1900 are not included in the study, as many were of a temporary nature and have since been demolished.

Homes built after 1971 are not considered, as they are not, for all practical purposes, in need of major maintenance or upgrading at this time. A passing reference is made to these homes in order to complete the listing and to show the historical evolution of single-family homes in Alberta.

Custom-designed homes and extremely large homes of the pre-World War II period are also not included in this document. These homes, while often similar in construction to more modest homes of the same vintage, generally feature unique fittings, materials and layouts, and do not easily lend themselves to categorization. As a group they comprise a very small percentage of Alberta's housing stock; for example, in Calgary the estimate is 1/2% of the city's stock.

1.2. APPROACH AND ORGANIZATION OF THE MANUAL

This document provides the homeowner with a framework for developing a maintenance and improvement plan for his home. The scope and organization of the manual reflect the four major steps in an improvement process:

Building Assessment and Maintenance Requirements

A checklist is provided to help the homeowner identify maintenance and repair requirements.

Planning Improvements

An overview of typical improvement actions provides useful guidelines for the homeowner contemplating either upgrading existing space or making spatial alterations.

Developing a Maintenance and Improvement Plan

Contraints such as cost and scheduling are introduced and used to help the homeowner develop a plan of action.

Arranging and Controlling the Work

The final section reviews the process of ensuring that the work is done to the homeowner's satisfaction.

The manual is written as a reference document; it is, therefore, not necessary to read all sections. However, homeowners who are primarily interested in improvements should ensure that their home is in adequate condition before they finalize their improvement plans.

BUILDING ASSESSEMENT AND MAINTENANCE REQUIREMENTS 2

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

2.1. INTRODUCTION

Due to the variability of maintenance standards, original construction quality, and extent of previous alterations, a home assessment package is included to assist in determining the present state of the home. Suggested repairs are identified as:

2.1.1. Assessment Package

Critical if the work must be done to prevent structural degradation of the house or to prevent health and safety hazards. Critical items are identified as "C".

Discretionary if the work should be done to ensure the long-term serviceability, liveability or energy efficiency of the house. Discretionary items are identified as "D".

2.1.2. Establishing Adequacy

Adequacy is determined by the following criteria: safety of occupants, preservation of the existing building fabric and comfort of occupants.

In some cases where these criteria are met, upgrading to meet modern standards may involve extensive reconstruction. In such cases a major upgrading will not be recommended unless other components are being changed.

2.1.3 Organization and Approach

The material is presented in a checklist format and covers the most likely problem areas in house maintenance in Alberta. Each item includes a brief comment to assist the homeowner in checking the existing conditions of his home; suggested remedial action for particular problems is also included, along with a rating in terms of the critical (C) or discretionary (D) importance of undertaking the repair.

2.2. RECORDING REQUIRED REPAIRS

Using Worksheet No. 1, record the general information pertaining to your house. This material will be useful at various stages in the improvement planning process. Then review Sections 2.3 to 2.14 and list the repair items which are required to your home on Worksheet No. 2.

Blank worksheets are provided in Appendix 1; a completed sample of Worksheet No. 2 is shown on page 44.

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

2.3. FOUNDATIONS - GENERAL

Generally no maintenance is required beyond ensuring that drainage from the building is adequate. In the event of construction immediately adjacent to the home, monitor the site and foundations for signs of settlement. In areas with clay soils or a high water table, excavations (i.e. for sewers, etc) may cause settlement problems on adjacent properties; the site and house should be monitored during and after this type of construction activity.

ISSUE		COMMENT	ACTION	*PRIORITY
2.3.1	Is there a stone or concrete <u>foundation</u> at least 4 feet below grade? YES ☐ NO ☐	Some old structures have "mud sills"--heavy wood beams resting directly on the ground. These eventually must be replaced, which is a major undertaking.	Install adequate foundations <u>PRIOR</u> to undertaking any renovation.	C
2.3.2	Is <u>concrete</u> in foundation soft and crumbling? NO ☐ YES ☐	This may be serious.	Have an enginee: check the found tion.	C
2.3.3	Are there any <u>cracks</u> in the foundation walls? NO ☐ YES ☐	This could be serious, or it could be from settling that stopped years ago.	Have an engineer check the foundation.	C
2.3.4	Do <u>exterior walls</u> seem plumb? YES ☐ NO ☐	Out-of-plumb walls can be a sign of serious foundation problems.	Check foundation.	C

* Key: C = Critical
D = Discretionary

ISSUE	COMMENT	ACTION	PRIORITY
2.3.5 Does ground slope away from foundation so that rain water drains off? YES ☐ NO ☐	This may result in a damp basement. A wet foundation may deteriorate.	Regrade so that the ground slopes away from the foundation.	D
2.3.6 Do rain-water leaders or downspouts divert water away from house? YES ☐ NO ☐	If downspout goes into ground, be sure it isn't pouring water into the earth next to the foundation. Improperly installed or maintained downspouts are a common cause of damp basements.	Extend downspouts or use splash pads to lead water away from house. If there is a drain connection to storm sewer clear any blockage or modify downspouts to drain at surface.	D
2.3.7 Do sills (wood beams at top of foundation walls) or joists (often floor joists are imbedded in the concrete wall) show signs of rot? NO ☐ YES ☐	Probe with pen-knife.	Eliminate source of water which is causing rot. Replace rotted material. Minor damage may be controlled by use of fungicide.	C

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

ISSUE	COMMENT	ACTION	PRIORITY
2.3.8 Does basement show signs of dampness or periodic flooding? NO ☐ YES ☐	It's a good sign if important tools and papers have been stored on the basement floor. Bad signs: rust spots, efflorescence or mildew on walls, material stored on top of bricks to raise it above floor level.	Check for causes: spring flooding, sewer back-up, poor drainage, etc. Eliminate source of dampness or flooding prior to undertaking any development in basement.	D
2.3.9 If you have a wood foundation, are there any signs of settling or leakage? NO ☐ YES ☐	A properly designed and built preserved wood foundation should have a life expectancy equal to the strucure which it supports. Untreated wood foundations are, however, subject to rot.	Determine cause of problem. Repair as soon as possible.	C

2.4. STRUCTURE - GENERAL

For wood structures, on-going monitoring of the most likely sites where rot may occur is the only maintenance required providing that the structure has been found adequate. Potential problems areas should be adequately repaired and/or ventilated. Properly maintained, a wood structure will last more than 100 years. In Alberta, very few load bearing brick or masonry homes have been built; brick is used as a veneer only. Refer to Section 2.5 for details on masonry construction.

ISSUE	COMMENT	ACTION	PRIORITY
2.4.1 Do floors have a pronounced sag or tilt? NO ☐ YES ☐	Simple test: Place a marble on the floor and see if it rolls away. A A sloping floor could just be due to normal settling or serious structural flaws. Check for causes.	If movement is recent, have an engineer or experienced contractor check it.	C
2.4.2 Do floors vibrate and windows rattle excessively when you jump on floors? NO ☐ YES ☐	This is a sympton of inadequate support. Among possible causes: undersized beams or floor joists, inadequate bridging, cracked joists, rotted support posts. Often this can be cured fairly simply with a few new support posts and shimming. Some vibration is to be expected and is not necessarily a problem.	Check for cause and repair as soon as possible.	D
2.4.3 Is there a noticeable bounce to the staircase when you jump on it? Are there any noticeable gaps between treads, risers and side stringers? NO ☐ YES ☐	The cause of substantial vibrations or gaps should be checked.	Establish cause and repair.	D

ISSUE	COMMENT	ACTION	PRIORITY
2.4.4 Do doors swing freely? YES ☐ NO ☐	Check for doors which have been recut or planed to suit twisted openings. Doors which bind may indicate either normal settling or more serious structural flaws.	Check for cause and repair	D
2.4.5 Are there signs of insect infestations? NO ☐ YES ☐	In heavily wooded ares of Alberta, homes are subject to infestations of carpenter ants. The ants leave large piles of frass (resembles sawdust). The ants may weaken structural members. Other insects or pest infestations, while unpleasant and sometimes posing a health problem, will not damage the structure. The most common are cockroaches, silverfish, grain beatles, mice, ants and spiders. All may be controlled by an exterminator.	Contact exterminator	C
2.4.6 Are there signs of wood rot? Check basement and attic in particular. NO ☐ YES ☐	High humidity and poor ventilation may cause wood members to be constantly damp and wood rot may ensue. Probe suspicious areas with a nail or pen knife. An apparently sound surface may harbour rot at the core. Signs of rot include: soft, crumbling wood; white stringy fibrous growths; shallow cubical checking; a 'mushroom' smell; cracking pattern across and with the grain. A blue stain on sap wood indicates a fungus growth and may indicate that conditions are right for rot.	Eliminate causes of problem: high humidity and poor ventilation. Remove structurally damaged elements and replace. In severe cases consult an architect or an engineer.	C

2.5. EXTERIOR CLADDING - GENERAL

A variety of claddings are in use today. A brief description of the most commonly used follows:

Brick

For brick structures built prior to World War II, repointing of the masonry may be necessary, particularly on walls facing the prevailing winds (generally North and West). Flashings, eavestroughs and caulking should be checked on a regular basis (1-2 years) to prevent water penetration which will result in rapid deterioration of masonry. Masonry in Alberta, when protected from water damage, has an almost indefinite life span.

Wood siding

Wood sidings will last over 100 years if properly maintained. However, the siding's ONLY protection is a stain or paint finish; failure of the finish can result in rapid deterioration (1-3 years). Deterioration takes the form of checking, splitting, rot or raised grain. Finishes deteriorate more rapidly on the South and West elevations.

Generally dark stains, solid stains and stains with wood preservatives offer greater protection than light coloured, transparent stains. All stains and paints will fade and chalk to a certain extent; in oil based paints this chalking process is desirable as it allows better adhesion of the next coat.

Up to 8 or 9 coats of paint may be applied before stripping is required; however, the failure of one layer to bond adequately to the one underneath will cause problems; as a result some stripping is normally required prior to repainting. Blow torches should NOT be used to strip exterior paint due to the extreme fire hazard.

Aluminum sidings

The first pre-finished aluminum sidings introduced in the early 1960s were subject to extensive fading, chalking and colour quality control problems. Aluminum sidings normally last well beyond their original guarantee period (varies 5 - 20 years). Aluminium sidings are easily dented, particularly if no backer board is provided, and are therefore subject to hail damage. Small scratches may be painted over. If aluminium siding is painted, repainting will be required every 4-5 years.

Over the past 15 years, a light gauge product has often been used on modestly priced homes; when no backer board is used, this type of siding dents easily.

Steel siding

When first introduced in the early 1960s steel siding was relatively expensive. Today it is generally the same cost as aluminium siding. Early products had some problems with uneven colour, particularly in the pink/coral range; some fading was also common.

Vinyl siding

Introduced in the early 1970s, vinyl sidings were originally subject to uneven colour and thermal expansion/contraction problems. Newer products coupled with better installation techniques are much more reliable. The only significant problem is soiling due to static electricity. The siding must be scrubbed to remove the dirt and is not recommended in areas with high air pollution (including dust).

Stucco

In a dry climate, stucco is highly durable (50 years). The problems are primarily related to water damage and cracking due to movement of the wall; satisfactory patching is difficult. Stucco soils easily; painting is usually undertaken for this reason (average 5 years).

Life expectancy of exterior claddings

Finish	Life Expectancy	Comments
Semi-transparent stain	4 years (avg.)	Fades
Solid stain	5 years (avg.)	Fades less noticeably
Latex solid stain	5 years or better	Most resistant to fading
Modern aluminium sidings	min. 20-40 years	Life of siding depends on quality of product.
Early steel sidings (factory finish)	min. 10 years	Most early sidings are still in excellent condition after 25 years.
Modern steel sidings	min. 20 years	Probably much longer life expectancy.

	Finish	Life Expectancy	Comments
	Vinyl coated	20 - 40 years	
	Oil stain	4 years (avg.)	Fades
	Latex exterior paint	5 years (avg.)	Primer required, fades
	Oil based exterior paint	4 years (avg.)	Chalks, primer required
	Early aluminium sidings	min. 10 years	Can last up to 40 years if fading and chalking is tolerated.
Upgrading exterior claddings	To lower maintenance:	install vinyl, steel or aluminium siding	
	To improve performance:	add insulation to exterior wall before installing new exterior cladding or use insulating siding.	
	Co-ordinate with:	new windows, doors, air seal, insulation.	

ISSUE		COMMENT	ACTION	PRIORITY
2.5.1	Any sign of major bulges in exterior walls? NO ☐ YES ☐	Sight along exterior wall. If brick veneer is used as a cladding, check for properly installed brick ties or foundation problems. For other claddings check for moisture or foundation problems.	Establish cause and repair	C
2.5.2	Wood siding: Are there any loose, cracked or missing boards? NO ☐ YES ☐	This is an open invitation to water penetration resulting in wood rot.	Replace and repair as soon as possible.	C

ISSUE		COMMENT	ACTION	PRIORITY
2.5.3	Is <u>decorative woodwork</u> firmly attached to house and tightly caulked to prevent water penetration? YES ☐ NO ☐	Decorative woodwork is especially prone to rot and is often expensive to repair.	Repair as soon as possible.	D
2.5.4	Is <u>exterior paint or stain</u> fresh and in good condition? YES ☐ NO ☐	If paint is not new, is it powdering and chalking to a dull powdery surface? This is the way old paint should look. This is not a major problem. If paint is peeling or blistering you may have a serious problem, either an exterior leak or lack of an adequate vapour barrier on the interior. Paint failure may also be due to too many layers of old paint or to a chemical reaction between an oil and a water-based paint.	Identify cause and repair. If there is no vapour barrier, reduce humidity in home, and apply a "vapour barrier" paint to interior walls.	D
2.5.5	<u>Aluminum and Vinyl Siding:</u> Is siding buckling along its length? NO ☐ YES ☐	This may be due to improper installation such as siding nailed so that it cannot expand or contract freely. It can also be due to moisture penetration.	The problem is aesthetic. Repair involves removing and re-installing siding. Check cause and repair.	D

ISSUE	COMMENT	ACTION	PRIORITY
2.5.6 Stucco: Is stucco cracking, crumbling or falling off? NO ☐ YES ☐	This is usually a water penetration problem. Check eavestroughing, roofing flashings. An inadequate vapour retarder or air barrier and high interior humidity could also be the culprit.	Locate problem and repair. If the vapour retarder or air barrier is inadequate reduce humidity in homeand apply a "vapour barrier" to interior walls and seal and caulk to prevent air movement through exterior walls.	C or D
2.5.7 Exterior Masonry Walls: Any signs of cracks? NO ☐ YES ☐	Horizontal cracks and hairline cracks in mortar are not usually a major problem; cracks that run vertically through bricks and mortar are more serious and may indicate serious foundation problems.	Check for cause and repair.	C
2.5.8 Is mortar soft and crumbling; are bricks missing or loose? NO ☐ YES ☐	If so, water is probably the culprit. If the problem is localized, check the roof and window sills above the area for water penetration. If the problem occurs in a random fashion over the whole wall surface it may indicate the lack of either an interior vapour barrier or an air barrier or both.	Check for cause and If a vapour retarder is required, use an approved vapour retarding paint on the interior of perimeter walls and seal all joints and openings.	C

ISSUE		COMMENT	ACTION	PRIORITY
2.5.9	Stonework: Any sign of spalling, cracking of the stone? NO ☐ YES ☐	Again water may be the major culprit.	Locate cause and repair.	C or D
2.5.10	Are there open joints around door frames, window frames and trim? NO ☐ YES ☐	Check that joints between dissimilar materials such as wood and masonry are well protected with both flashing and caulking.	Flash and/or caulk as soon as possible.	C
2.5.11	Check for rot: Does wood near the ground pass the "pen-knife" test? YES ☐ NO ☐	Wood should be probed with a pen-knife to test for rot. Check areas such window frames, sills, floor beams and posts, porches and steps.	Remove source of moisture if possible and/or seal against moisture. Treat wood with a preservative.	C
2.5.12	Is all exterior untreated wood at least 150 mm (6 in.) above the ground? YES ☐ NO ☐	If not, this is an inviting target for rot.	Remove untreated wood and replace with pressure treated wood. Rot can also be controlled by treating wood with a preservative.	C or D

ISSUE	COMMENT	ACTION	PRIORITY
2.5.13 Is there vegetation close to the building? NO ☐ YES ☐	Vegetation holds moisture in wood; check behind it for rot.	Repair woodwork and cut back vegetation.	C or D
2.5.14 Any signs of rot in the eaves or attic? NO ☐ YES ☐	Leaking roofs and gutters often spill water into the top of a house where it goes undetected for long periods.	Locate any leaks, and repair.	C

2.6. ROOFING - GENERAL

A sound, tight roof is the first line of defence against water. If the roof is in bad shape, plan on repairing or replacing it right away.

Life expectancy

Most roofing materials may be expected to last at least 20 years. However, the quality of workmanship, type of products, and the degree of exposure to the elements will affect the durability of any roof. The following list provides an approximate life expectancy for roofing materials.

Metal	60 years	Wood shingles	
		No finish	15 years
Clay tile	100 years	Stain finish	30 years
Built-up (tar & gravel)	25 years	Asphalt shingles	
		Standard (210 lb/sq.)	20 years
Wood Shakes		Pre-1963 (230 lb/sq.)	20 years
No finish	30 years		
Stain finish	50 years		

Up to 90% of roofing problems are related to failures at the perimeter or at junctions. Maintenance or replacement at these points will extend the anticipated lifespan of the roof considerably.

Adding insulation

If additional insulation is added to the attic, ensure that ventilation is adequate particularly if the vapour barrier is not to modern standards. Poor ventilation allows condensation on the underside of the roof deck and can result in rotting of the roof structure.

Re-roofing

Asphalt shingles - When properly installed, a second layer of shingles may be laid over the original roofing. Check the condition of the roof deck first. A third layer will usually exceed the loading limits for the roof structure and is not recommended.

Built-up roofing - If the roof is severely deteriorated, the orginal membrane should be removed prior to re-roofing.

Upgrading the roofing

To lower maintenance: Install new asphalt shingles, built-up, metal or tile
To improve performance: Install attic ventilation, eavestroughs
Co-ordinate with: The installation of attic insulation, skylights.

ISSUE		COMMENT	ACTION	PRIORITY
2.6.1	Pitched Roof: Wood shakes, wood shingles, tiles, asphalt shingles. Any sign of missing, broken or warped shakes, shingles or tiles? NO ☐ YES ☐	Missing or damaged roofing could mean that there is water damage inside. A careful inspection of the attic should be undertaken; check for water damage or stains to underside of sheathing. Binoculars can give you a good close-up view if it is impossible to actually get up on the roof.	Replace missing or damaged tile. Plan on replacement of roofing within 5 years.	C
2.6.2	Asphalt Shingles: Are the mineral granules getting thin and do edges look worn? NO ☐ YES ☐	Roofing is approaching its life expectancy.	Plan on replacement of roofing within 5 years.	D
2.6.3	Does roof look new but lumpy? NO ☐ YES ☐	New roof may have been applied directly over old shingles. This can be done with no significant problems apart from a somewhat decreased life expectancy for the second layer; however once the second layer begins to fail, it is very difficult to pinpoint the exact location and nature of the problem.	If more than one layer of shingles plan on 5 year reduction in the life expectancy of your roof.	D

ISSUE		COMMENT	ACTION	PRIORITY
2.6.4	Flat roof: Any sign of bubbles, separation or cracking in the asphalt or roofing felt? NO ☐ YES ☐	Roofing should be flat and tight to roof; it shouldn't feel squishy under foot.	Roof may be approaching its life expectancy.	D
2.6.5	Flat roof/flashings: Is the exterior wall stained or deteriorated at the roof line? NO ☐ YES ☐	This generally indicates that the roof flashing was not properly installed or has failed.	Repair, as minor problems can quickly become major.	C
2.6.6	Flashing around chimneys and valleys or parapets: Any sign of rusty, loose or missing flashing? NO ☐ YES ☐	Flashing is the weakest part of any roof; problems will generally occur in these areas first.	Repair immediately as minor problems can quickly become major.	C
2.6.7	Chimneys: Is the masonry cracked or crumbling? Is the mortar loose? NO ☐ YES ☐	A pick may be used to test for soundness of the masonry and mortar. The top of the chimney is most susceptible to this problem.	Repoint masonry. If old brick was used, do not use Portland cement mix. Rebuild deteriorated section. Use new brick, as old bricks are often severly damaged by the flue gases.	C

ISSUE		COMMENT	ACTION	PRIORITY
2.6.8	Do old chimney flues have a tile lining? YES ☐ NO ☐	If not, they could be a fire hazard if used in conjunction with wood-burning fireplaces.	Install flue liner.	D
2.6.9	Gutters: Are there any loose, rotted or missing gutters? NO ☐ YES ☐	There should be a gutter at the bottom of every sloped section of the roof. Staining or peeling paint on the underside of the eave or on the top of a wall below a gutter or eaves generally indciates a blocked or inadequate gutter.	Install or replace gutters before damage occurs.	C
2.6.10	Does the ridge of the roof sag? NO ☐ YES ☐	This could be normal settling that comes with age, or it could be caused by undersized or rotted rafters. The minimum rafter sizing can be checked with your local building regulation department. The roof structure might be somewhat undersized. Heavy wet snow might cause a problem in the future.	Check wood rafters and correct problem if due to rot or if undersized	C

ISSUE	COMMENT	ACTION	PRIORITY
2.6.11 Is attic adequately ventilated? YES ☐ NO ☐	Check especially for signs of mildew on underside of roof boards. If your home stays warm in the summer long after the outside temperature has dropped, despite adequate insulation in the attic, this space may be inadequately ventilated. A minimum ratio of 1:300, unobstructed venting area to ceiling area, is required. In confined spaces a ratio of 1:200 may be required to control moisture and heat buildup.	Increase size or number of vents or install mechanical ventilator. If attic insulation is increased adequate ventilation is essential.	D

2.7. ENERGY EFFICIENCY - GENERAL

Homes built prior to 1978 fall short of today's standards for energy efficiency. While homes built prior to World War II were often seriously deficient from an energy conservation viewpoint, most have had some upgrading done over the years. Improving the energy efficiency of your home can reduce your heating costs and improve the year-round comfort of your home. Typically the major sources of energy loss or inefficiency in these homes occurs as a result of poor insulation, air leakage and inefficient fixtures (furnace, fireplace, water heater).

While it is possible to upgrade an existing home to the most energy efficient standards in use today, it is not likely to be worthwhile to do so. However, it is possible to make significant improvements at a relatively low cost. Co-ordinating energy related improvements with repairs or space improvements is an ideal way of reducing the cost. For instance if you wish to refinish your home's exterior, consider installing additional insulation on the exterior wall prior to installing the new siding.

Condensation and ventilation problems can be an unexpected result of energy related improvement projects, if the work is not done properly. The homeowner should consult the "how to" publications such as thoses issued by Canada Mortgage and Housing Corporation (CMHC) and Alberta Energy and Natural Resources (ENR). Appendix 3 provides a detailed list of these and other useful reference material available free of charge from various government agencies.

Vapour retarders prevent diffusion of water vapour into the exterior wall cavity or into the attic. Air barriers prevent the movement of moisture laden air from inside the house to the exterior through fine cracks or gaps.

If you have not yet done so, consider applying for a Canadian Home Insulation Program (CHIP) grant. This grant provides up to $500.00 towards the cost of upgrading insulation and energy efficiency. Senior citizens may also be eligible for the Seniors' Home Improvement Program (SHIP) to assist in upgrading the energy efficiency of their home.

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

ISSUE	COMMENT	ACTION	PRIORITY
2.7.1 Have you had an energy audit done for your home? YES ☐ NO ☐	An energy audit will help you plan improvements and reduce heating costs.	In order to calculate the energy efficiency of your home, complete the "Ener$ave". Information sources are listed in Appendix 3.	D
2.7.2 Has your home been insulated? If so, how? What is the R-value? YES ☐ NO ☐	Exterior walls - In cold weather a simple test of wall insulation adequacy is to feel the inside of exterior wall and compare with temperature of an interior partition. They should feel about the same. If not wall insulation may be lacking. Recommended standards are: Attic Min. R20 Ideal R60; Walls R12 R30; Basement walls R 8 R20	The first priority should be to install insulation to the most poorly insulated area of the house (usually basement walls). Additional attic insulation is usually simplest to install but not necessarily the most cost-effective. Adding insulation to walls is often a challenge and is generally best undertaken in conjunction with other improvements.	D
2.7.3 Was your home insulated with ureaformaldehyde? NO ☐ YES ☐	Evidence suggests that some people can suffer health problems due to this material. Homes so insulated may be extremely difficult to sell.	Contact Canada Mortgage and Housing Corporation (CMHC) for details on testing for fumes and on repair procedures.	C

ISSUE	COMMENT	ACTION	PRIORITY
2.7.4 Has your home been thoroughly caulked and sealed to prevent air infiltration and heat loss? YES NO	In the attic check: Holes or cracks around penetrations through the attic floor for pipes, electrical wiring, exhaust vents, walls, furnace flue and dropped ceilings. Check that the attic access hatch or doorway is weather stripped and insulated and that recessed light fixtures are boxed in to keep insulation clear of fixture. In the basement check: Gaps between foundation wall and sill plate, around windows and where ducts penetrate walls (fresh and combustion air, ducts, dryer exhaust duct). In the living areas check: Air leaks at electrical boxes on exterior walls, at windows at built-in furniture locations on exterior walls and baseboards.	Caulking and installation of foam pads to electrical outlets should be underaken immediately; this work will have a significant impact on your heating bills for a relatively low investment. Consult Appendix 3 for a list of helpful reference material.	C

ISSUE	COMMENT	ACTION	PRIORITY
2.7.5 Has your home had <u>extra insulation</u> and/or extensive caulking added since it was built? NO ☐ YES ☐	If your home was reinsulated after construction or if you have undertaken extensive caulking, sealing and weather stripping to seal your home, an adequate vapour retarder and air barrier is necessary to avoid condensation problems in the exterior walls and attic space. A kraft paper barrier is generally inadequate if modern energy conservation practices have been followed. Check the following items - they may be evidence that the vapour retarder/ air barrier is inadequate: a) blistering exterior cladding b) condensation in attic. Condensation can lead to problems such as rot of structural members, blistering paint or exterior cladding, or deteriorating brick.	Upgrade the vapour retarder/ air barrier if there is evidence that the vapour barrier is not effective. The simplest method is to use an effective approved vapour retarding paint and to caulk joints between building materials. Consult the reference list in Appendix 3 for "how to" publications. Caution: Check that fresh and combustion air is supplied to the furnace and hot water heater. This is especially important for houses which are made more air tight.	D

ISSUE	COMMENT	ACTION	PRIORITY
2.7.6 Does your home have a vapour retarder/air barrier throughout? YES ☐ NO ☐	Homes built before 1940 are unlikely to have a vapour retarder unless it was installed later. Homes built between 1940 and 1965 will probably have rockwool batts with kraft paper vapour retarders (not every effective). Homes built after 1965 will generally have fibreglass batts and polyethylene retarders. To check for the presence of a vapour retarder, check under the insulation in the attic or remove an electrical cover plate and electrical box in the wall. Check around the box. In older homes only walls may have a vapour retarder. The lack of a vapour retarder may not be a cause for concern in drier climates such as southern Alberta. Care, however, should be exercised to ensure that there is a vapour retarder and air barrier.	If no vapour retarder exists use an approved vapour retarder paint as a minimum measure. If extra insulation or sealing is undertaken, consider reducing humidity inside the home. An air test (some insulation contractors offer this service) is an effective way of pinpointing air leakage problems. In homes where the vapour barrier is inadequate and new exterior finishes are planned, an air seal paper installed instead of building paper will significantly reduce air movement through the wall and thus mitigate the vapour problem.	D

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

ISSUE		COMMENT	ACTION	PRIORITY
2.7.7	Is your heating system as efficient as possible? YES ☐ NO ☐	Duct joints can be taped to reduce losses. The furnace should be maintained on a regular basis (clean filters). Fresh air should be supplied directly to the return air system; combustion air should be supplied to the area adjacent to the furnace. If you are replacing your furnace, consider a more efficient furnace and a flue damper to reduce energy costs.	Maintain the furnace. Consider a programmable thermostat. Supply adequate fresh air and combustion air to the furnace and hot water heater. Refer to Appendix 3 for helpful reference literature.	D
2.7.8	Is your hot water heater energy efficient? YES ☐ NO ☐	Adding insulation to the tank exterior will reduce heat loss and lower fuel bills for a very low initial cost. If you are replacing your hot water heater, consider a more efficient appliance.	Install an insulating blanket; insulate piping.	D
2.7.9	Do you have damper on your fireplace? YES ☐ NO ☐	Top-sealing dampers for masonry chimneys are now available and will reduce heat loss when the fireplace is not in use. To improve energy conservation install heat circulating fireplace or doors on existing fireplace; retrofit with fresh air intake, or install a more efficient appliance such as an air-tight stove.	Install a top-sealing damper as soon as possible.	D

2.8. WINDOWS & DOORS - GENERAL

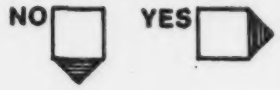
Wood windows and doors will last indefinitely if water damage is avoided. The paint finish and glazing putty should be maintained to avoid problems.

To reduce maintenance and improve performance replace windows with sealed units (double or triple glazed), new aluminum or vinyl coated sash, insulating blinds or shutters, weatherstripping or opening window for ventilation.

Co-ordinate with replacement of exterior siding and insulation of exterior walls.

ISSUE		COMMENT	ACTION	PRIORITY
2.8.1	Does every room have at least one opening window? YES ☐ NO ☐	Homes built during the period 1940-65 often have few opening windows. Ventilation, particulary during the summer, is poor.	If windows are to be replaced, provide an opening window in bedroom and living areas.	D
2.8.2	Are your windows double glazed? YES ☐ NO ☐	Storm windows or two separate panes of glass are less energy efficient than sealed units, but generally provide adequate comfort and reasonable energy performance. Single glazed windows are generally drafty and energy wasteful.	For comfort and energy saving consider upgrading as a priority. Reglazing with thermal units in the existing sash is sometimes possible in older homes.	D

ISSUE		COMMENT	ACTION	PRIORITY
2.8.3	Do you have storm windows? YES ☐ NO ☐	Ensure caulking is adequate. Storm windows can only provide good thermal insulation if they are well sealed. Maintenance is high for wood.	Replacement or upgrading to thermal units may be a priority if spaces are drafty or if maintenance is a problem.	D
2.8.4	Wood Windows: Do window frames show signs of water damage? NO ☐ YES ☐	Look for chipped and curling paint at bottom of window frame and sills. This is usually due to condensation on windows during the winter months.	Reduce humidity levels in home; if single glazed consider thermal sealed units.	D
2.8.5	Is glazing putty sound? Is paint finish intact? YES ☐ NO ☐		Repair as wood windows deteriorate rapidly if unprotected.	D
2.8.6	Are your windows well sealed? Are doors weatherstripped? YES ☐ NO ☐	To check, feel for draughts around the window during cold weather.	Refer to Section 2 Caulk, seal and weatherstrip as soon as possible.	C
2.8.7	During the winter, is there condensation on the frames of your aluminum or steel windows? NO ☐ YES ☐	This is due to the transfer of cold from the outside through the metal window frame. This condition, known as thermal bridging, is inherent in the window construction. The condition is worsened when the outside temperature drops or when the inside humidity rises.	Reduce humidity in the home or replace windows with "thermally broken" units.	D

ISSUE		COMMENT	ACTION	PRIORITY
2.8.8	Is there condensation on the window glazing? 	This is due to high interior humidity and low glass temperature. Sometimes, particularly during very cold weather, curtains or blinds prevent adequate circulation over interior glass surface aggravating the problem.	Reduce interior humidity level and/or add additional panes of glass. Improve air circulation at windows.	D

2.9. FLOORING - GENERAL

Many flooring materials wear well but are replaced because they require high maintenance or are subject to changes in fashion. The life expectancy of flooring materials varies greatly depending on traffic, level of maintenance and quality as indicated by the following.

Carpet	2-10 years varies greatly depending on quality and traffic.
Asphalt tile	9" x 9" with black backing material used 1945-55. Already exceeded life span. Maintenance problems occur as seams tend to open up.
Asbestos tile	12" x 12" used 1955-65. 20 year life.
Vinyl tile	Used 1965 to present. 20 year life.
Sheet vinyl	Used 1965 to present. 20 year life.
Cork	Primarily since 1975, rarely before. 20 year life with urethane coating; wears poorly with wax finish.
Rubber	1975 to present. 20 year life. Usually solid color with raised pattern or bumps for skid resistance. Difficult to maintain.
Hardwood strip flooring	Used 1900 to present. Varnish and urethane finishes. 45-75 years. In most residential uses may be expected to last indefinitely. Sanding and refinishing every 12-15 years. 10 mm (3/8") thickness may be sanded up to 4 times; standard 20 mm (3/4") between 7 and 11 times.
Parquet	1955 to present. Varnish and urethane finishes. 15-50 years. Sanding and refinishing 12-15 years. Tongue and grove parquet may be refinished 2-3 times; butt-edged parquet 4-7 times. Cushioned parquet flooring can fail after only 5 years of use, due to deterioration of backing material.

Stained hardwood flooring	The penetrating stains introduced in the late 1970s, if properly maintained, will extend the life expectancy of hardwood floors beyond the normal limits. Darker stains are generally more effective than lighter ones. The stain provides a matt finish and requires much maintenance during the first 1-2 years.
Softwood flooring	Very poor. Was generally not intended as a finish flooring material.
Ceramic tile	Unlimited life, if properly installed. Generally fails due to failure of the grout or backing material which then allows water penetration.

ISSUE		COMMENT	ACTION	PRIORITY
2.9.1	Does the flooring require replacement or refinishing? NO ☐ YES ☐	Check each room.	List desired action and review alternatives.	D

2.10.	INTERIOR WALL/CEILING FINISHES - GENERAL Walls/ceiling materials	From 1900 to 1940: wood lath with 3 coats plaster was generally used. From 1940 to 1955 (sometimes as late as early 1960s): gyproc lath (16" wide drywall panels) with 2 coats of plaster was used. From 1955 to the present: 1/2" thick drywall is standard.
	Ceiling finishes	From 1900 to 1950: decorative plaster coves, textures and medallions were used. Preformed plaster ceiling coves were common from 1950 to 1965. From 1965 to 1975: sprayed textured ceilings were usually standard; asbestos was included in the mix. This can be a health hazard if the textured areas have been painted. After 1975: sprayed texture ceilings were asbestos free.
	Plaster	Plaster walls are naturally slightly irregular; matching these walls to new construction will prove difficult. Thickness of plaster and wood lath varies from 1" to 1-1/2" compared to 1/2" for standard drywall. Thicknesses of plaster with gyproc lath vary from 5/8" to 3/4". For improved performance and appearance: Laminate drywall over new vapour retarder on existing plaster walls. Care must be taken to co-ordinate with millwork.
	Maintenance	Re-painting is usually required every 4-5 years under normal conditions.
	Finish millwork	Millwork is subject to swelling and contraction as the humidity levels change. This action may cause checking and open joints. Sealing raw wood surfaces and controlling the home's humidity levels will help alleviate the problem. Many glues used in pre-World War II construction were water based and deteriorate gradually over the years.

ISSUE	COMMENT	ACTION	PRIORITY
2.10.1 Are there any signs of <u>damp drywall or plaster</u>? NO ☐ YES ☐	This can mean leaks coming either from the roof, internal pipes or condensation. Check especially top-floor ceilings, the insides of exterior walls and ceilings, and partitions under bathrooms; peeling paint may indicate the beginning of a problem. Damaged finishes around the bathtub are usually a localized problem. If wall tile or mortar is loose, the penetration of water may cause serious deterioration of the backing material (drywall or plaster). Damaged backing material or rotting studs must be replaced prior to repairing the wall tile.	Repair cause of problem first. In high humidity areas, fibre-glass reinforced cementitious board may be more suitable than drywall as a backing material; if drywall is used, seal and caulk before applying tile.	C
2.10.2 Is there any <u>loose plaster</u> or drywall in walls or ceilings? NO ☐ YES ☐	Cracks in plaster are common, but plaster that is spongy when you push on it will have to be repaired or replaced. New cracks indicate movement in the walls. Check! Decorative plaster and moulded plaster coves can be repaired. Consult Alberta Historic Sites for suppliers and tradesmen.	Repair cause of problem first and then make repairs.	D

2.11. ELECTRICAL SYSTEM - GENERAL

Where older, ungrounded wiring is still in use, check periodically for signs of deterioration. Repeated power failures due to blown fuses or breakers are a sign that the system is overloaded or deteriorating.

ISSUE		COMMENT	ACTION	PRIORITY
2.11.1	Does wiring in basement appear to be a rat's nest of old freyed wires? NO ☐ YES ☐	This could be a potential fire hazard.	Have the system inspected and repaired as required.	C
2.11.2	Is wiring in basement mounted on porcelain knobs and threaded through porcelain tubes (knob and tube system)? NO ☐ YES ☐	Although this system is generally safe, it is subject to short circuits at fixture and outlet locations if the wires are disturbed. This can lead to electrical fires.	Replacement of the whole system is strongly recommended.	C
2.11.3	Is wiring aluminum instead of copper? NO ☐ YES ☐	The first systems were installed with faulty connectors. Check! Remove a cover plate on an outlet and look for the designation CO/ALR on the outlet.	If there is no CO/ALR designation, have all connectors replaced as soon as possible.	C
2.11.4	Does main power box in basement have at least 100 amp capacity? YES ☐ NO ☐	An up-to-date installation will have capacity marked on it. An old fuse box with only 3-4 fuses in it means there may only be 30-40 amps--far too little.	Re-wiring is strongly recommended as part of house upgrading.	C

ISSUE	COMMENT	ACTION	PRIORITY
2.11 .5 Is there at least one <u>electrical outlet</u> on each wall in every room? Is there at least one light fixture or electrical outlet controlled by a wall switch in each room? YES ☐ NO ☐	Inadequate outlets will lead to overloading as multiple cords tend to be used. This is a hazard.	The installation of additional outlets is recommended.	C
2.11.6 Is there a <u>smoke detector</u> YES ☐ NO ☐	Smoke detectors save lives! Particularly in situations where the electrical system has not been upgraded or when there are smokers, this should be a high priority improvement.	Install a smoke detector as soon as possible.	C

2. BUILDING ASSESSMENT AND MAINTENANCE REQUIREMENTS

2.12. PLUMBING SYSTEM

ISSUE		COMMENT	ACTION	PRIORITY
2.12.1	Is the <u>water</u> supplied by the city? YES ☐ NO ☐	City main is the most dependable source. A shallow (dug) well is the least desirable. If water is from a well, it is best to get it analyzed for fitness.	Check quality and quantity	C
2.12.2	Is plumbing connected to a city <u>sewer system</u>? YES ☐ NO ☐	If there is a septic tank, was it cleaned in the last 3-4 years? Overloaded septic tanks are common sources of trouble. It's best to call the serviceman who did the last cleaning and get his opinion of the system.	Check to see if system requires cleaning.	D
.3	Are the <u>water pipes</u> and waste pipes in good condition? YES ☐ NO ☐	The basement is the best place to evaluate the overall condition of the plumbing. For example, look for patches on the waste pipes; it's an indicator of advanced age.	When planning improvements replace old lines if they are to be enclosed in new walls or ceilings.	D

ISSUE	COMMENT	ACTION	PRIORITY
2.12.4 Are <u>water pipes</u> copper, brass or galvanized steel? YES ☐ NO ☐	If they are steel, a magnet will stick to them. Copper or brass is longer-lasting than galvanized iron. Magnets won't stick to lead or copper piping. Lead will be soft and silvery when scratched with a pen-knife. Galvanized steel pipe is susceptible to corrosion and clogging. Problems normally occur at joints; such problems are often very difficult to repair adequately and may dictate replacement of the galvanized piping with copper pipe.	In areas with hard water, galvanized piping may require periodic de-scaling to prevent clogs. Replace piping.	D
2.12.5 Is <u>water pressure</u> adequate? YES ☐ NO ☐	Test by turning on top floor sink faucets; then turn on bathtub and flush toilet. If water slows to a trickle, piping may be inadequate or badly clogged with scale.	Inspect piping for scale and repair or replace as required.	D

2.13. HEATING SYSTEM

ISSUE		COMMENT	ACTION	PRIORITY
2.13.1	Was furnace originally designed to burn coal? NO ☐ YES ☐	It is probably more than 45 years old and should be a candidate for replacement for energy conservation or functional reasons.	Replace with energy conserving furnace.	D
2.13.2	Does system operate satisfactorily? YES ☐ NO ☐	If there are cold drafts, uneven heat distribution, the system may not be properly designed; supply and return outlets may be improperly sized or located. Supply air grilles should be located under windows and return air on interior walls.	Have the system inspected and upgraded as required.	D
2.13.3	Is there a fresh air and combustion supply to the furnace? YES ☐ NO ☐	Systems which were installed more than 10 years ago may have an inadequate air supply. This situation may be dangerous, particularly if the home has been made more air-tight.	Install new and adequate air supply to furnace.	C
2.13.4	Steam or hot water systems: Do floorboards around radiators show signs of black stains and rot? NO ☐ YES ☐	This comes from leaks and indicates system hasn't been well maintained.	The system may require major repairs. Have it inspected.	D

ISSUE		COMMENT	ACTION	PRIORITY
2.13.5	Is capacity of hot water heater at least 40 imp. gallons? YES ☐ NO ☐	This is considered to be the minimum required by a family of 4 with an automatic clothes washer.	If tank is inadequate, replace.	D
2.13.6	Any sign of leaks or rust spots on hot water heating tank? NO ☐ YES ☐	Check by peeking through small door that gives access to the pilot light.	Repair or replace tank in the near future.	D

2.14. FIREPLACES

ISSUE		COMMENT	ACTION	PRIORITY
2.14.1	Have you inspected your fireplace and its flue in the past year? YES ☐ NO ☐	Masonry fireplaces should be checked periodically for deteriorated mortar joints. Wood burning fireplace flues should be cleaned periodically to avoid a build-up of wood tars; accumulation of tar can lead to fires in the flue.	Inspect. Repair. Clean periodically. Refer to Section 2.7 for energy considerations.	C

2.15. SUMMARY OF MAINTENANCE REQUIREMENTS

Worksheet No. 2 provides a summary of the maintenance and repairs items required to your home either immediately or within the next five years. A completed example of Worksheet No. 2 is shown on page 44. Blank worksheets are provided in Appendix 1. Used in conjunction with Worksheet No. 3, Planned Improvements, Worksheet No. 2 will assist in developing a final work plan for your home improvements.

2.16. SAMPLE COMPLETED WORKSHEET NO. 2 MAINTENANCE REQUIREMENTS

ITEM	ISSUE	REQUIRED REPAIR	BENEFIT	COST	PRIORITY
1	Paint peeling off wood siding	1 Repaint or 2 New siding - aluminum?	Cheaper now No maintenance	$ 600 $4500	5
2	Attic insulation - R12 Basement - none Walls - R10	Attic: blown in R-40 Basement: new R20 Walls - if other repairs	Save on heating bill	Attic: $200 Basmt: $200 + my time	2
3	LR/DR daughty No opening windows	1 Caulk, seal, weatherstrip everywhere 2 New opening windows	More comfortable	Seal: $20 Windows: $1500	4
4	Flooring in kitchen bath worn out	1 Kitchen: new vinyl 2 Bath: ceramic tile	Easier to clean Looks better	$500	3
5	Kitchen counters - blistered, ugly	Replace counters coordinate w/new kitchen cabinets?	Happier cook	Counters: $150	3
6	High heating bill	In addition to insulation & sealing: new thermostat	Save $30/month on gas bill	$90.00	1

3

PLANNING IMPROVEMENTS

3. PLANNING IMPROVEMENTS

3.1. INTRODUCTION

Careful planning of the renovation or addition will ensure that the changes made to your home meet your needs and stay within budget. If changes are being scheduled over a long period of time, planning is even more important as it will help avoid unnecessary re-building during later stages.

Planning should include a review of your needs and desires, a thorough evaluation of the design alternatives and the costs and benefits of proposed changes, and an honest appraisal of your budget limitations.

The following section provides a framework for establishing a long-term home improvement program. As you complete each step, fill in Worksheet No. 3. A completed example is provided on page 61 and blank worksheets are provided in Appendix 1. The completed worksheet will be a useful tool which, when coupled with the assessment and maintenance list (Worksheet No. 2), will help you to make renovation decisions. This section poses a series of questions related to needed and desired improvements. Answer them for your particular situation and home. Sketches shown to the left of the text illustrate how to approach the planning of improvements.

3.2. BASIC CONSIDERATIONS - GENERAL

Is re-couping the investment in your home a major concern? When undertaking major renovations or additions, the homeowner is naturally concerned about the impact of the new work on the value of his home. The homeowner is well advised to remember that a home's value is based on what buyers will pay; this amount may not necessarily be equal to the amount invested by the owner in the home. In light of the volatile nature of the real estate market in Alberta, exact predictions are difficult; however, the following general guidelines may be useful.

3.2.1 Impact of Repairs on House Values

Essential repairs which ensure that the building envelope or fabric of the building does not suffer major deterioration (eg. roof repairs) do not generally increase the value of a property. However, they do insure against a decrease in value.

3.2.2 Impact of Cosmetic Improvements

Some repairs and renovations increase the attractiveness of a home from the buyer's viewpoint without necessarily increasing its value. In a sluggish market, these features may mean the difference between selling a home or having it languish on the market, unsold, for many months. Items in this category include re-wiring and cosmetic improvements such as painting or refinishing hardwood floors.

3.2.3 Impact of Major Improvements

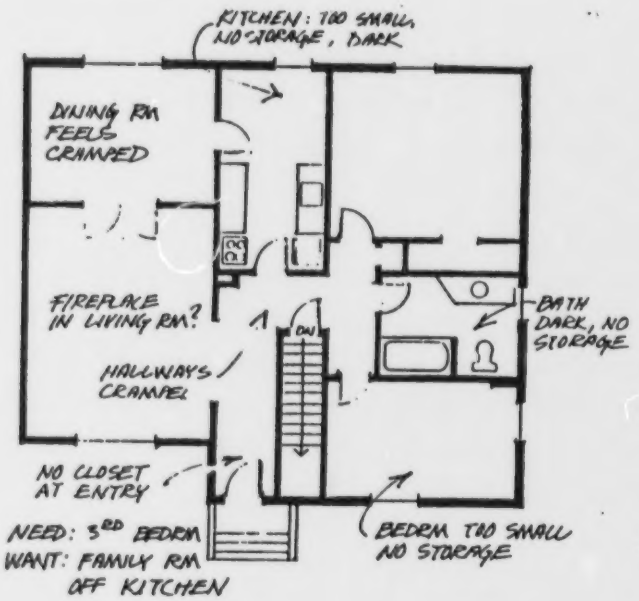
The homeowner who is considering major alterations or additions should consult a real estate agent prior to undertaking any changes. An agent familiar with the resale market in a particular neighbourhood will be able to provide valuable insight into the impact of the proposed improvements on the value of your home.

The major determinants of house value are neighbourhood, location within a neighbourhood, and overall size of the home. Most neighbourhoods have a relatively narrow range of home values; major improvements will generally not increase a home's value beyond that established by the marketplace for that particular neighbourhood.

3.2.4 Recovering Your Investment

If the homeowner anticipates selling a home within 1-2 years, an investment in major improvements will probably be impossible to recover. In such cases, only those necessary repairs and cosmetic improvements which increase the home's marketability should be considered.

3.2.5 Changing Needs

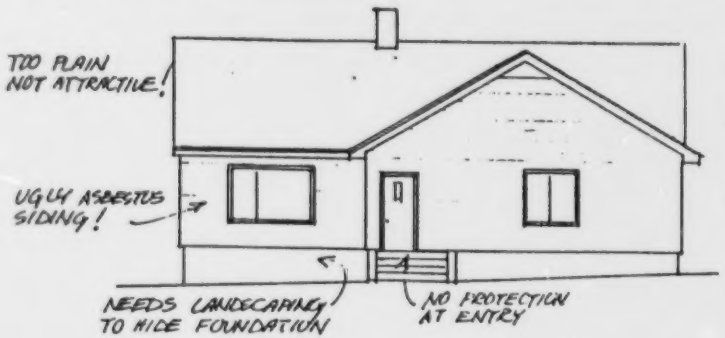

KITCHEN: TOO SMALL, NO STORAGE, DARK
DINING RM FEELS CRAMPED
FIREPLACE IN LIVING RM?
BATH DARK, NO STORAGE
HALLWAYS CRAMPED
NO CLOSET AT ENTRY
NEED: 3RD BEDRM
WANT: FAMILY RM OFF KITCHEN
BEDRM TOO SMALL NO STORAGE

Where major alterations are deemed necessary, and particularly where major additions are required to suit a family's lifestyle, the homeowner should seriously consider buying another home which provides spaces better suited to his needs or accept that he may not be able to re-coup all of his investment in renovations should he decide to sell the house in the near future.

What changes do you foresee in your family's requirements for additional or modified spaces in your home?

The addition of a family member such as a new baby or a grandparent may necessitate changes to your home. Modifications might also be desirable to accommodate a change in your family's lifestyle or to allow a family member to pursue a hobby.

3.2.6 Exterior Appearance

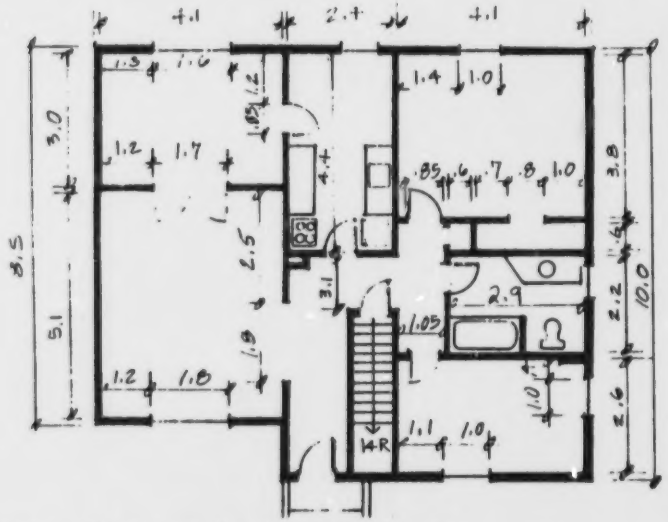


Do you hope to change your home's appearance or character?

While changes usually proceed from the inside out, it is possible that such changes may improve the exterior appearance of your home. Using the original style of the home to guide you when making changes will ensure that alterations will fit into the original house design; renovations which are compatible with the neighborhood style are visually more pleasing, and will not look dated in appearance in later years.

3.3 DOCUMENTING EXISTING CONDITIONS AND ESTABLISHING CONSTRAINTS

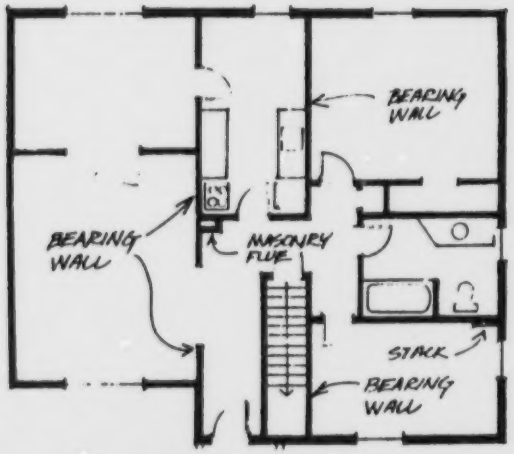
3.3.1 Measured Drawings



Do you have a set of measured floor plans for your home?

A measured floor plan will be invaluable during the planning process. Show all windows, doors and built-in features such as vanities, counters, fireplaces. Draw plans at 1:50 (metric) or 1/4" = 1'0" scale.

3.3.2 Mechancial and Electrical



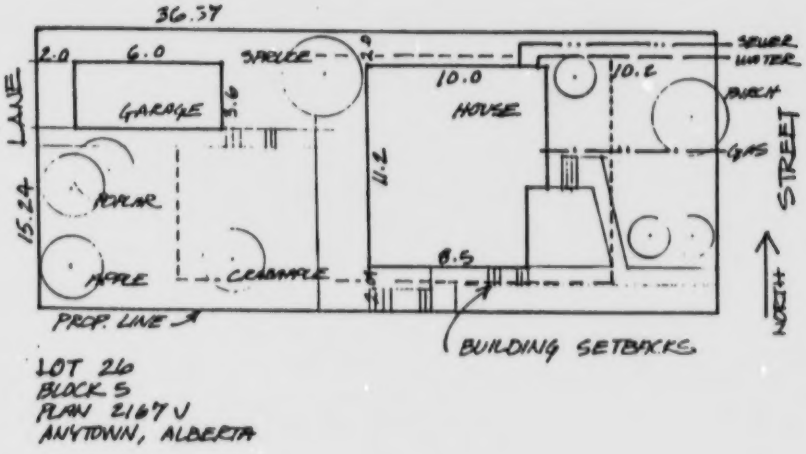
Are you familiar with your home's structural, mechanical and electrical systems?

Locate key elements such as bearing walls, plumbing stacks, and furnace on your plans. This will avoid costly surprises at a later date.

3.3.3 Lot Plan

Do you have an official survey plan of your lot?

Locate the main site features such as house, garage, and fences on the site. Also note the location of major trees or landscaping elements. Locate the service connections if possible (gas, water, sewer, electrical).



3.3.4 Legal Constraints

What legal constraints exist on your property?

Municipal Bylaws

Review with your local municipal planning department the land classification (zoning) requirements for your property. Add the minimum yard requirements to your site plan.

The Planning Act of Alberta is implemented by Municipal Land-Use Bylaws. These bylaws regulate the site development, type of land uses (residential, industrial, or commercial), size of developments and type of site servicing (water, sewer, and garbage). Because these bylaws regulate almost every aspect of a building's exterior and site development, it is recommended that the Municipal Planning Department be consulted as a first step in the process of major improvements to your home. Changes to a building's use or size require the approval of the municipal authority.

Building Code

Review the requirements of the latest edition of the Alberta Building Code, Part 9. The Alberta Building Code is a prescriptive code aimed at ensuring the safety of the building's occupants. The requirements of the code apply to all buildings including those being restored, renovated or altered. Maintenance and minor repair work do not normally require a building permit. However, Homeowners should review any major alterations with their local municipal building department.

A building permit MUST be obtained from the municipal authority prior to undertaking any alterations or renovations which modify the home's structural, electrical or mechanical systems. All additions including new garages require a building permit.

Caveats
Covenants
Easements

Examine the title of your property (copies are available at the Land Registry Office, Government of Alberta). Restrictive covenants or caveats have been placed on certain properties. These legal instruments are registered on the Certificate of Title of the property by a variety of bodies including Alberta Culture, previous property owners, the land developer or public utilities. As these legal instruments often limit development of extensions and garages or the planting of trees, a quick check is in order when planning a major alteration. A title search will reveal the presence of such instruments and their nature. It is sometimes possible to have a legal instrument removed from the title, but a judge's order is usually required.

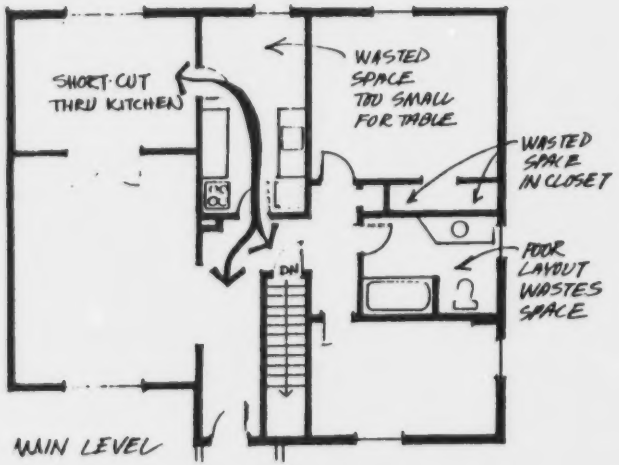
3.4. ESTABLISHING REQUIREMENTS AND PREFERENCES

Is the existing space used efficiently?

Perhaps some areas are underutilized and could be put to better use with minor changes to the layout of the furniture.

3.4.1 Circulation Systems

Is there an effective circulation system?

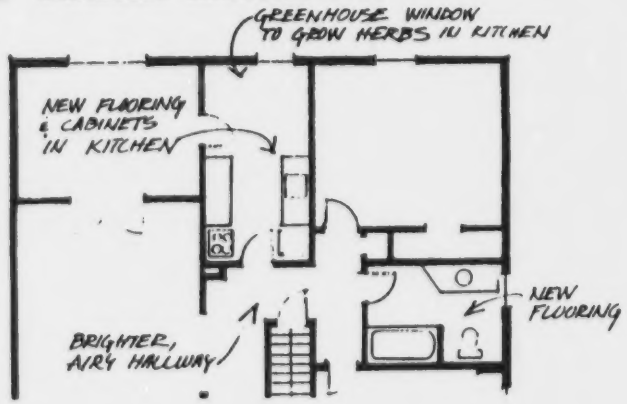


Common problems include closets not located next to entrances, short-cut routes through the kitchen or routes cutting diagonally through rooms.

The house should provide opportunities for privacy or socialization as required. Common problems include poor separation between bedrooms and living areas, a need for two distinct living zones to accommodate childrens' actitivies separate from parents' areas.

3.4.2 Aesthetic Considerations

Are there major re-decorating projects which you would like to undertake?



These might include new carpet, decorative trim, built-in storage units or a decorative window.

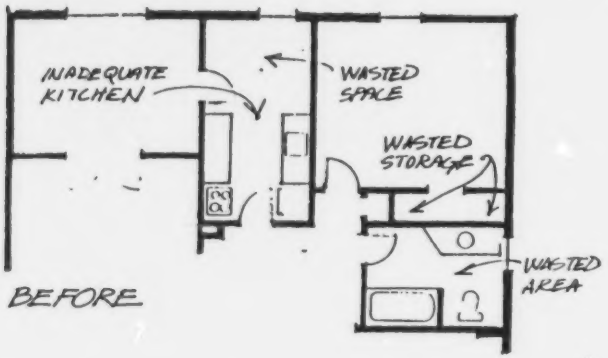
3.5. EXPLORING SOLUTIONS

Now that you have established a list of necessary and desired improvements to your home, you can start planning the improvements. The following series of questions will help you review your alternatives. You may discover that some problems have more than one solution; include all your design alternatives on your worksheet. Although you may prefer one option over the others, a review of costs and priorities at a later stage may lead you to prefer one of the other alternatives.

When listing your alternatives on the worksheet also list the benefits of each particular option.

If you are having problems with the design of possible solutions, review item 3.6.2, Design Professionals.

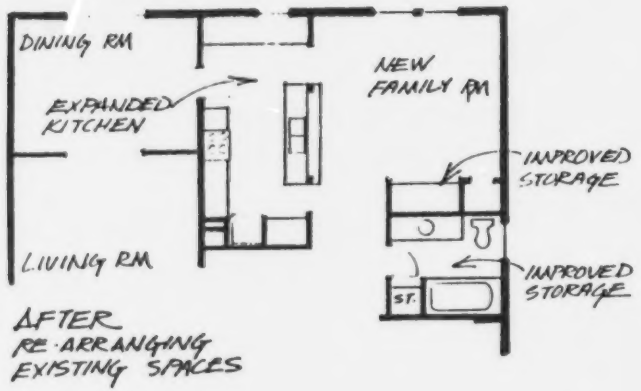
3.5.1 Minor Changes



Can you make minor changes to your homes to satisfy some of the issues listed on your worksheet?

Minor changes such as re-painting, installing new flooring in combination with buying new furniture may satisfactorily resolve aesthetic or storage problems by enhancing the existing spaces. Many repair items identified in the diagnostic section may be undertaken in this portion of the work.

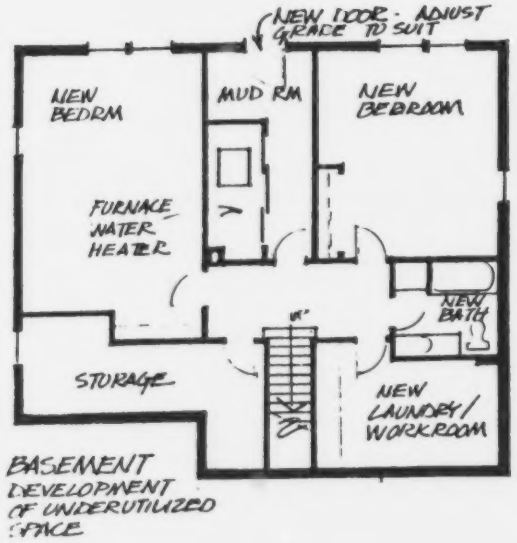
3.5.2 Re-arranging Space



Could you re-arrange the existing areas to accommodate some of your requirements?

Adding, removing or moving windows, doors or walls may improve circulation or provide more usable area within a room. Consider converting a room to another activity, for example in a bungalow, convert a bedroom to a family room.

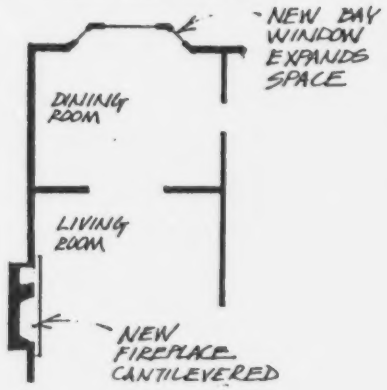
3.5.3 Underutilized Space



Can you convert underutilized space to suit your requirements?

Converting an attic, basement or attached garage can be an economical way to increase the liveable area in a home.

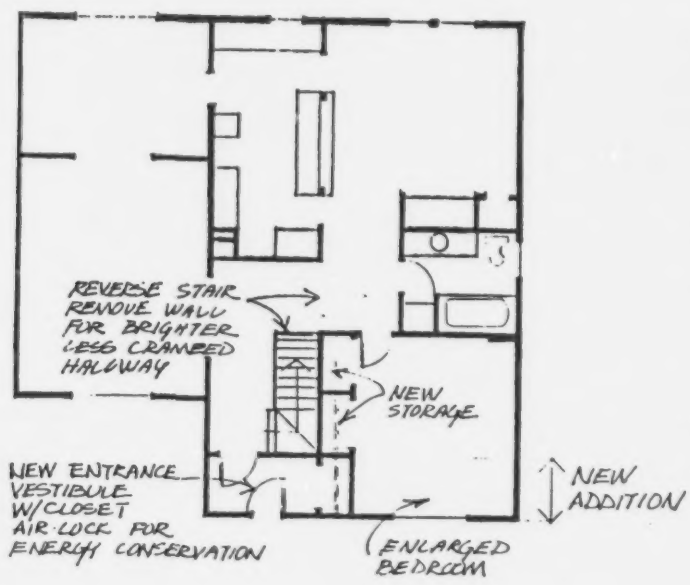
3.5.4 Small Additions



Would a small addition solve some of your space planning problems?

Minor additions such as dormers, bay windows or small cantilevered areas may add sufficient space to accommodate new needs without extensive new construction.

3.5.5 Major Additions


REVERSE STAIR REMOVE WALL FOR BRIGHTER LESS CRAMPED HALLWAY
NEW STORAGE
NEW ENTRANCE VESTIBULE W/CLOSET AIR LOCK FOR ENERGY CONSERVATION
NEW ADDITION
ENLARGED BEDROOM

If none of the previous approaches resolve your problem, can you add to your home in such a way as to provide sufficient space for your needs?

Major additions may be undertaken in 3 ways:

1) adding new room(s), usually to the rear of the home
2) adding a second floor to a bungalow
3) adding a new wing with a link to the main house.

A completed example of Worksheet No. 3, which serves to summarize and assign priorities to planning improvements is shown on page 61. Blank worksheets are provided in Appendix 1.

3.6. PLANNING IMPROVEMENTS

Can you co-ordinate some of your space planning solutions with some of the repair items already listed?

Do some planning solutions provide an opportunity for upgrading the energy efficiency of your home or for lowering the maintenance requirements?

Also refer to your Assessment and Maintenance Worksheet No. 2. If, for instance, a major planning goal is to improve the exterior appearance of your home, you may have two alternatives: re-painting or installing new vinyl or aluminium siding. The new siding option provides an opportunity to upgrade the energy efficiency of your home; insulation can be blown into the exterior walls from the outside without disturbing the interior; an air barrier and paper and new siding can then be installed over the old siding.

Add these additional improvements to your list; include an outline of benefits such as savings on your gas bill, lowered maintenance or improved comfort.

3.6.2 Design Professionals

Will you require assistance from a design professional such as an architect or engineer to plan your improvements?

In the course of a renovation project, the home owner may wish to consult a specialist regarding specific problems. If so, the following general guidelines may be useful.

Clearly define the type and extent of information sought. In many cases, a visual inspection by the design consultant or a single interview between you and the consultant may adequately solve your problem. Ask other homeowners for references. Not all architects, engineers, or designers are familiar with residential construction. Agree on the fee before the work is undertaken. Clearly state what information or work is expected. Gather whatever information you can, in order to reduce the consultant's work. A specialist's advice can save you time and money, particularly if you do some of the initial research.

Architects

Architects are governed by the Architects' Act of Alberta; their professional association regulates fees for specific types of work. If major repairs or alterations are contemplated, an architect would be most helpful during the planning stages.

Architects may provide assistance in the following areas: assessing the condition of your home; establishing the cause of specific problems; space planning; detailed design of alterations; preparation of construction documentation; and supervision of construction.

In instances where engineering problems arise, architects normally engage an engineer as a sub-consultant.

Details of the type and extent of services, fees, etc. are available from:

Alberta Association of Architects,
Duggan House,
10515 Saskatchewan Drive,
Edmonton, Alberta
T6E 4S1
Telephone 432-0224.

Engineers

An owner may wish to consult an engineer on specific problems involving the structural, mechanical or electrical systems. Engineers are governed in much the same way as architects and provide a similar range of services in the structural, mechanical and electrical field. The professional association may be consulted for references.

Association of Professional Engineers, Geologists & Geophysicists of Alberta (APEGGA)

Suite 229,
640 - 5 Avenue S.W.,
Calgary, Alberta.
T2P 0M6
Telephone: 262-7714

OR

1010 - 1 Thornton Court,
Edmonton, Alberta.
Q5J 2E7
Telephone: 426-3990

Other Services

Where an owner wishes to have a set of construction drawings prepared, he may wish to consider using a senior student in the architectural programs of the University of Calgary, SAIT or NAIT. Usually this approach is less costly.

Some drafting companies also provide this service and are listed in the yellow pages. Ask for references and check them out

For improvements which are limited to interior finishes and minor spatial changes, an interior designer could be the most helpful consultant, particularly if re-decoration if a major component of the work to be done. Interior designers are registered under the Architects' Act of Alberta and operate in a similar fashion.

Some contractors provide design services. If design is a relatively small portion of the work, you may wish to review the project with a contractor.

SAMPLE WORKSHEET NO. 3 MAINTENANCE REQUIREMENTS

ITEM	ISSUE	REQUIRED REPAIR	BENEFIT	COST	PRIORITY
1	Kitchen too small dark, no storage	Renovate completely Use seating area for enlargement	Happy cook Increase in house value?	$8000	1
2	Will need 3rd bedroom soon Front Bd room small	1 Finish lower level 1 Br 2 Add on to house 3 Finish 2 Bd & bath on lower level	1 Cheaper Cheap if rear Br becomes Family Room	1 $8,000 2 $12,000+ 3 $12,000	3
3	Want family room or at least breakfast nook	1 Use rear bedroom 2 Add on - How? 3 Get design help	1 Easiest	1 $5,000 2 $15,000 ?	2
4	Hall/stair down cramped, dark	1 Open stair up, turn it around	Open stair relieves cramped space	Part of 8	4
5	Entrance - no closet	1 Add on to front of house 2 Reorganize space - How?	1 Too expensive by itself but w/improved looks?	Part of 8	4
6	LR - New fireplace would be nice	Zero clearance unit off side	Increase comfort & house value	$1,500	6
7	DR - No space for buffet	Bay window	Additional storage space	$1,000	7
8	Exterior of house very plain, even ugly	New entry, siding windows	Small addition solves problems No. 5, 2, 8, 4	$15,000	5

4

DEVELOPING A MAINTENANCE AND IMPROVEMENT PLAN

4. DEVELOPING A MAINTENANCE AND IMPROVEMENT PLAN

4.1. INTRODUCTION

Your list of possible improvements and repairs is probably so long now, that you're wondering why you don't just push the house over and start from scratch!

This next stage, however, will help put the problem back into perspective. Establishing how much you can afford and how much your various alternatives cost will enable you to start choosing between options.

Use Worksheet No. 4 to record your decisions as you review this section. A completed example of Worksheet No. 4 is shown on page 71. Blank Worksheets are provided in Appendix 1.

4.2. COSTING

How much will each improvement listed on Worksheets Nos. 2 and 3 cost?

Costing renovations is at best a tricky business. However at this stage we only need approximate values. To price your options, try using a combination of the following approaches. Record your estimates on Worksheets Nos. 2 and 3.

1. Check with neigbours or friends who have recently had similar work done to their home.
2. Check with contractors. Many will give you quick estimates based on a unit cost; for instance $50.00 per square foot for a single storey addition or $120.00 per linear foot of upper and lower kitchen cabinets.
3. For items which you intend to do yourself, check how much materials will cost.
4. Include a contingency allowance in your budget. Allow at least 5-10% of your budget for contingencies.
5. Remember to include for all parts of the work, utility service relocations, permits, re-landscaping and repairing damage to other areas caused during construction.

4.3. ESTABLISHING A BUDGET

What is the maximum amount of money available to undertake improvements immediately?, in 2 years?, in 5 years?

These funds may be derived from savings, personal loans or re-financing of the home. A discussion with your mortgage holder or bank may be necessary at this stage.

4.3.1 Sweat Equity

How much and what sort of repair or construction work would you undertake yourself?

As a rule of thumb, approximately 50% of the cost of an improvement is in labour. Some tasks such as demolition, rough framing for basement finishing, installation of insulation and vapour barrier, painting, and tile laying require few skills. Others such as electrical, gas and plumbing work are best done by licensed tradesmen. Establish what you can do, bearing in mind that you may only be able to work evenings and weekends.

4.3.2 Scheduling Renovations

Is there a time constraint on implementing changes?

The imminent arrival of a new family member, or the problems involved in living without an operational kitchen or bath may dictate that the work be done as quickly as possible: you may have to hire someone to do most of the work. Finishing a basement hobby area may not be as critical.

4.3.3 Grants

Does your renovation qualify for a grant?

Homes built prior to 1977

Canadian Home Insulation Program (CHIP)
Homes built before September 1, 1977, are eligible for a maximum $500.00 grant. Up to 60% of the cost of materials and/or labour to improve the energy efficiency of your home, may be covered by the grant. Phone toll free 1-800-232-9492 for information and application forms.

Farm Homes

Farm families should contact their location District Home Economist (Alberta Agriculture) for details of their programs.

Senior Citizens

Seniors' Home Improvement Program (SHIP)
Residents of Alberta who are at least 65 years of age or widows or widowers aged 55 to 64 years may be eligible for a grant to a maximum of $3,000 for home improvements. The maximum eligible income is $20,000/year. For further information in Calgary call: 297-8464; in Edmonton call 427-5760; elsewhere call toll free by calling the long distance operator and asking for Zenith 22093.

Homes built prior to 1925

The owners of homes built before 1925 should consult Alberta Culture's Historic Sites Services prior to undertaking any major improvements. Homes which have particular architectural or historical merit may be eligible for provincial grants, to a

maximum of $75,000, for renovations. For those homes which do not qualify for grants, the Historic Site Services nonetheless provide a wealth of technical and planning advice to assist the homeowner during alterations. Information on identifying problems, locating specialized building products or contractors, advice on correct renovation procedures, and references for specialized consultants are all available free of charge from the Historic Sites Service.

Other Grants

In designated areas, homeowners may qualify for a loan to a maximum of $10,000 under the Residential Rehabilitation Assistance Program (RRAP); the funds, a portion of which may be forgiveable, are available for home improvements or to assist in making a home accessible to disabled persons.

Grants are also available through the Canadian Oil Substitution Program (COSP) to convert heating systems from oil to gas or electricity. Contact your local CMHC office for details.

Alberta Energy and Natural Resources provides the booklet, Grants for Homeowners, which outlines the grants and assistance available to homeowners for energy efficient renovations. Contact your local provincial office for details.

4.4. REVIEW OF IMPROVEMENT OPTIONS

Your worksheets may now be showing a total cost of repairs and improvements which is much higher than your budget. In order to bring your improvements in on budget, some items may have to be delayed while others may not appear as important once you consider the costs involved.

4.4.2 Reviewing Alternate Solutions

Are there a number of solutions listed for a particular problem?

For instance, improved exterior appearance might be achieved in a number of ways:

1. repainting (low cost)
2. new aluminium siding (medium cost)
3. new vinyl coated steel siding (high cost).

Bearing in mind the benefits of each approach (listed on your worksheet), decide how much improved exterior appearance is worth to you.

4.4.3 Long Term Savings

Are there improvements which will save you money in the long run?

Many energy related improvments will save on gas bills in years to come. Some, such as programmable thermostats or sealing and caulking will pay for themselves in a few years; others may take 10 to 20 years. The cost of this type of improvement may be very low in the long run. Some improvements may simply

result in lower long-run maintenance costs. For instance, an investment in metal siding will save the cost of re-painting every 4-5 years.

Review your list of improvements and repairs (Worksheets Nos. 2 and 3) and establish which if any have a long-term cost benefit. Adjust your priorities to suit.

4.4.4 Co-ordinating Improvements and Repairs

Are some improvements cheaper or easier to do in conjunction with others?

There may be a cost savings in undertaking some work in conjunction with other improvements or repairs. For instance, if you wish to install new siding and new windows, you could combine these improvements in one stage to avoid having to repair the siding at a later date to suit the window.

Review Worksheets Nos. 2 and 3, and co-ordinate portions of the work where feasible. Modify your priorities accordingly.

4.4.5 Staging the Work

Can you stage the work over a period of time?

Where major alterations are desired, it may be possible to phase the work over a period of years to suit your financial situation. For instance, Phase 1 could involve providing 2 new

bedrooms and a bathroom for your teenagers. Phase 2, a year later, might involve converting an older bedroom to a family room off the kitchen and improving the kitchen. Phase 3, later on, might provide a new master bedroom in an addition to the rear of the home.

Phased improvements must be planned carefully. An overall plan is needed to ensure that the requirements of a later stage can be accommodated without interfering with previously completed work. For instance, if you finish the basement first, allow for future heating runs to service planned upper level changes or install an accessible ceiling system.

4.5. FINALIZING THE PLAN

You should now be able to fill out Worksheet No. 4. A completed Worksheet No. 4 is provided on page 71. Blank worksheets are provided in Appendix 1. List your improvements by importance and phase. Include the estimated budget for each item; note the contingency sum for each item; the contingency sum plus the final contractor's estimate should not exceed your budget.

Before we proceed to contractor pricing, check your workplan against your original list of needs and desires.

4.5.2 Construction Drawings

Prepare drawings of your renovation. Include a description of all the work: demolition, new structure, electrical, mechanical, finishes, fixtures, etc. Clearly specify what is existing, what is to be kept, what is to be changed and what is new. You may require some professional help at this stage.

SAMPLE WORKSHEET NO. 4

ITEM	ISSUE	MAINTENANCE OR IMPROVEMENT ITEM	SWEAT EQUITY	COST	STAGE
1	Energy conservation	Seal/caulk Insulate attic	All labour	$250	1
2	Finish 1 - Br in lower level to allow for Fr.	Finish 1/2 basement for Br, storage Insulate all basement	Insulation, air barrier, paint carpet	$4,500	2
3	New family Rm/ kitchen layout	Convert rear Br extend existing kitchen New cabinets, etc.	Insulate flooring, paint demolition	$10,000	3
4	Finish 2nd Br in lower level	New Br + new Bath/ Laundry Rm	Demolition All Finishing Plumbing?	$7,500 $12,000 w/ plumber	4
5	Improve house appearance, entry hall, stair	Turn stair around, extend front, new windows in Lr, new siding	All finishing siding, take holiday & frame?	$8,000 Lots of my time	5

Total Budget $30,250 over 5 stages

5

ARRANGING AND CONTROLLING THE WORK

5. ARRANGING AND CONTROLLING THE WORK

5.1. INTRODUCTION

For most improvement plans, at least a portion of the work is not undertaken by the owner, but contracted out to a builder. The owner must locate contractors, obtain prices, supervise the progress of the work and co-ordinate the builder's work with his own improvements. Through out all of this, the owner and his family usually continue to occupy the home. The following discussion will help an owner undertaking improvements reduce the stress of this period and ensure that all participants are satisfied with the final outcome.

5.2. CHOOSING THE CONTRACTOR(S) - GENERAL

At least 3 estimates of the work should be obtained. Clearly outline what you want the contractor to do and what should be included in his contract. If you intend to do portions of the work yourself, specify the extent of this work and your timing. The following items should be considered when chosing a contractor.

On major renovations or where a number of trades are involved, the home owner should consider using a general contractor. The general contractor will hire sub-trades and coordinate their work. This approach is recommended where the owner has neither the time nor the experience to direct the construction or repair process.

In instances where the alterations are phased or modest in scope, the owner may wish to contract with each trade individually. This approach is particularly appropriate where funds are limited and time is not a critical factor.

The following guidelines may be useful when engaging a contractor:

5.2.1 Scope of Work

Provide a comprehensive description of the work required. This usually involves drawings and a written description of the work (specification). Review the scope of work with the contractor before he submits a price.

5.2.2 Finding a Contractor(s)

To locate contractors, check with other homeowners. Review with them the quality of work done, whether the work was done on time and in budget, and what sort of working arrangement and payment schedule was used. Ensure, in the case of a general contractor, that all sub-trades were paid by the general.

5.2.3 Quotations

Invite contractors to submit quotations for the work in writing. A minimum of three quotes should be obtained. Before a contractor is chosen, check his credit rating and his status with the Workers' Compensation Board Alberta. The contractor's performance on his last 2-3 projects should also be reviewed with the owners. Inspect at least one home renovation to determine the quality of his work; enquire whether the same sub-contractors will be used for your project.

5.3. CONTRACTS

Draw up a contract outlining the scope of work, the contract price and the construction schedule. Include a payment schedule and an agreement as to how extra charges, if any, will be billed to the project. Ensure that extras will only be undertaken with your approval. Standard contracts for general contractors and for sub-trades are available from the Construction Association of Alberta and Canada Mortgage and Housing Corporation (CMHC). A sample fixed cost contract, based on a CMHC contract form, is shown in Appendix 2, page 88.

In some cases a contractor will be unwilling or unable to give a firm price for the work. This normally occurs because the contractor cannot fully inspect the condition of those elements which he is expected to repair. In such instances, the owner should confirm the hourly rate, overhead and profit charges, the material mark-ups, and, if possible, an upset (maximum) price for the work. The work should then be carefully monitored. Work undertaken in this fashion (cost-plus basis) should be paid for only upon submission by the contractor of detailed lists of the hours worked and materials used; material invoices and time sheets should be checked carefully by the owner. Usually only a small portion of any project need be carried out on a Cost-Plus Basis.

5.4. WORK EXECUTION - GENERAL

Once the contract is signed and work has begun, monitor the progress of the construction. If you feel that work is substandard, incorrect or progressing too slowly, notify the contractor immediately and resolve the problem. Resist changing the plans unless you have agreed with the contractor what the changes will cost and what the delay will be.

Some delays and extra costs are inevitable, particularly in renovation projects. Good communication with the contractor and written approvals for extra work will help ensure that no misunderstandings arise during the progress of the work.

5.4.2 Inspections

Inspect the work as it progresses. If problems arise, resist talking to the tradesperson unless the situation is critical. All your comments should be directed to a single person, the site supervisor; this will avoid misunderstandings and arguments.

5.4.3 Payments

Payments should be made promptly and according to the contract schedule. This will usually be upon submission of invoices by the contractor, and subject to your inspection and approval of the work. Normally invoices are submitted on a monthly basis. The owner should withhold 15% of the payment to the contractor because construction work comes under the Builders' Lien Act of Alberta. Property can be liened by a contractor's employees or subtrades if they have not been paid by the contractor. Withholding this sum will help protect you, the owner, in the event of a lien being placed on your property by a tradesman or supplier who has not been paid, even though you may have paid the general contractor.

The 15% holdback must be paid to the contractor 35 days after the project is officially complete. It is recommended that the owner obtain from the contractor a Statutory Declaration to the effect that all tradesmen and suppliers have been paid. A letter of account from the Workers' Compensation Board should also be obtained prior to releasing the final payment.

In some cases, smaller contractors will request an advance before they undertake the work. It is recommended that an owner not pay any advances, as payments on a progress/inspection basis are your best guarantee that the work will be properly completed. If the contractor is concerned that he will not be paid, place the contract sum in trust with a lawyer.

5.4.3 Surviving a Renovation

Renovating a home may be extremely disruptive and stressful unless carefully planned. If extensive alterations are undertaken, particularly ones which involve the kitchen and/or bathroom, consider temporary accommodation elsewhere.

If you wish to live in your home during the construction process, consider the impact of the noise and dust on the family members, particularly those who spend most of their time at home.

The presence of workmen results in loss of privacy and may be a security problem. Valuables and furniture should be well removed from the construction area. Even conscientious contractors will find it difficult to avoid accidental damage to fragile pieces.

If at all possible limit the work to one area which can be temporarily sealed off from the rest of the house. A separate entrance to this area will ensure that tradesmen may come and go freely without disturbing your family.

A clear understanding of the extent of the work required will improve relations on the job. Outlining working hours and clean-up requirements will also reduce the disruption to your family.

APPENDICES

WORKSHEET NO. 1 - GENERAL INFORMATION

The following Worksheet No. 1, General Information, provides a useful format for recording a variety of information which may be required during the process of planning repairs and improvements. Complete the worksheet and retain for future reference.

1. TYPE OF HOUSE
   _____bungalow
   _____split level
   _____2-storey
   _____1-1/2 storey (partial use of attic space)
2. LAND USE
   (Call your local Planning Department)
   _____
   _____
3. MUNICIPAL ADDRESS
   _____
4. LEGAL DESCRIPTION
   A copy of the title is available from the Provincial Land Titles Office
   Lot _____ Block _____ Plan _____
5. SURVEY
   Number _____ Surveyor _____
6. BUILDER (if known)
   _____
7. DATE OF CONSTRUCTION
   _____
8. PREVIOUS OWNERS
   If any; include dates _____
   _____
   _____
   _____
   _____

9. HISTORICAL NOTES

Significant events or interesting anecdotes related to your home.

10. MAJOR OCCUPANCIES

Was your home ever used for other than single family occupation?

11. FIRES, FLOODS, LIGHTENING AND OTHER ACTS OF GOD

Was your home ever damaged?

12. MAJOR ALTERATIONS OR ADDITIONS

Has your home been modified in any major way? ie new kitchen, bath, wiring, etc.

13. DRAWINGS

List drawings of original home and/or alterations and file in binder

14. PHOTOGRAPHS — Note dates on back of photo

15. OTHER DOCUMENTATION — List

USING WORKSHEET No. 2 MAINTENANCE REQUIREMENTS

Worksheet No. 2, Maintenance Requirements, provides a simple format for recording needed rapairs, their cost, and their importance.

As you review Sections 2.2 to 2.14, list the repair items which you must or would like to undertake in the issue column. Also list the required repairs; there may be more than once approach, so list them as individual items. In pencil assign a priority to each. Once you have completed the Section 3 Planning Improvements, you may wish to modify the priority rating of some of the items.

Following a review of Section 4, Developing A Maintenance and Improvement Plan, fill in the cost column.

This completed worksheet will be of great assistance during the final planning stages of your improvements and when used in conjunction with Worksheets Nos. 3 and 4.

WORKSHEET NO. 2 MAINTENANCE REQUIREMENTS

ITEM	ISSUE	REQUIRED REPAIR	BENEFIT	COST	PRIORITY

USING WORKSHEET NO. 3 - PLANNING IMPROVEMENTS

Worksheet No. 3; should be used in conjunction with Section 3, Planning Improvements. As you review the questions in Section 3, note the issues which pertain to your home and situation on the Worksheet (for example: family room desired). In conjunction with the main issues, list the alternative solutions (for example: convert existing bedroom to family room or provide an addition to the rear of the house). Once you have completed Section 3, assign a priority to each item on your list. The cost column will be filled in after a review of Section 4.

WORKSHEET NO. 3 PLANNING IMPROVEMENTS

ITEM	ISSUE	ALTERNATE SOLUTIONS	BENEFIT	COST	PRIORITY

USING WORKSHEET NO. 4 - DEVELOPING A MAINTENANCE AND IMPROVEMENT PLAN

On Worksheet No. 4 outline the final plan for repairs and improvements to your home as you review Section 4 of the Manual. Refer to your completed Worksheets Nos. 1 and 2 and summarize the work which you wish to undertake. Add the costs and the order in which you intend to proceed with the work.

WORKSHEET NO. 4 DEVELOPING A MAINTENANCE AND IMPROVEMENT PLAN

ITEM	ISSUE	MAINTENANCE OR IMPROVEMENT ITEM	SWEAT EQUITY	COST	STAGE

TOTAL BUDGET _____

SAMPLE CONTRACT (based on CMHC form)

Between the Owner - A.V. Homeowner
1234 Home Street
Any City, Alberta

And the Contractor - Perfect Construction Ltd.
421 Business Street
Any City, Alberta

Subject Property 1234 Home Street
Any City, Alberta

The Contractor Shall:

1) Furnish all labour, materials, supervision and services to carry out the work detailed in the attached plans and specifications (initialled by the contractor and the owner) at the above address.
2) Maintain full public liability and property damage insurance covering the above work.
3) Obtain and pay for all necessary building permits, licences and certificates demanded by municipal and provincial regulatory authorities and give copies to the owner before work is started.

4) Maintain Worker Compensation coverage on all employees as required by provincial law, and assure that all subcontractors maintain such coverage on their employees.

5) Acknowledge the right of the owner to retain a builders' lien holdback (15%) as specified by the Builder's Lien Act of Alberta.

6) Do all work to the requirements of the Alberta Building Code currently in force and to any other standards which are applicable.

7) Be responsible for the work carried out under this contract by any subcontractors the contractor may employ.

8) Agree to start the work within 10 days of the signing of this contract, and to complete it not later than ____ days after the work has started.

9) Remove all construction debris from the property during construction and upon completion of the work.

10) Warrant the work and materials for a period of one year from date of completion, and during this time repair any defects immediately upon receiving written notice from the owner. This warranty does not replace the following manufacturers' warranties on materials and equipment (details to be included or attached).

The Owner Shall:

11) Be responsible for assuring that the property meets municipal land use bylaws and, if necessary, that subdivision development and/or reclassification permits have been obtained from the municipal authorities for the work covered in this contract.

12) Provide the space and freedom of movement on the property for the contractor's labour force to do their jobs.

13) Pay the Sum of $_____to the contractor, subject to clause 5 above, as follows: $_____ when the work is 50 per cent completed; $_____ when the work is 100 per cent completed and (if the property is free of any liens placed by the contractor or his agents) $ _____ (15% holdback) on the 36th day after the work is substantially completed.

Signed _____ _____

Contractor Owner

Date _____

APPENDIX 3 - REFERENCES AND SOURCES

SERVICES FOR HISTORIC HOMES (pre-1925)

Alberta Culture
Historical Resources Division
Historic Sites Services,
Old St. Stephen's College,
8820 - 112 Street,
Edmonton, Alberta.
T2G 2P8

University of Calgary,
Faculty of Environmental
Design,
2500 University Drive N.W.,
Calgary, Alberta
T2N 1N4
Telephone 284-6604

The Heritage Canada Foundation,
P.O. Box 1358, Stn. B.,
Ottawa, Ontario
K1P R5A
Telphone (613) 237-1066

Municipal Planning Departments

Glenbow-Alberta Institute,
130 - 9 Avenue S.E.,
Calgary, Alberta.
T2G 0P3
Telephone 264-8300

Old Strathcona Foundation,
8520 - 104 Street,
Edmonton, Alberta.
T6E 4G4
Telephone 443-5866

Heritage Planner,
City of Calgary,
Telephone 268-8010

Heritage Planner,
City of Edmonton,
Telephone 428-5228

For other municipalities consult the planning department.

Heritage Advisory Boards
Consult the municipal planning department.

SOURCES FOR CODES, BYLAWS

City of Calgary,
Planning Department,
Building Regulations Division (Code)
Building Home Safety and Home Improvement Pamphlet Service
Development Division (Bylaws)

City of Edmonton,
Planning Department (Code and Bylaws)

Alberta Building Code 1981
Alberta Labour
General Safety Services Division
Building Standards Branch,
Edmonton, Alberta.

Copies available from:
School Book Branch,
10410 - 121 Street,
Edmonton, Alberta.
T2N 1L5

Land Titles

Consult your local provincial title registry.

PROFESSIONAL SERVICES

Alberta Association of Architects,
Duggan House,
10515 Saskatchewan Drive,
Edmonton, Alberta.
T6E 4S1

Association of Professional Engineers, Geologists & Geophysicists of Alberta,

Suite 229,
640 - 5 Avenue S.W.,
Calgary, Alberta
T2P 0M6

or

1010 - 1 Thornton Court,
Edmonton, Alberta.
Q5J 2E7

APPENDIX 3 - SOURCES AND REFERENCES

SOURCES FOR FARM HOMES

Alberta Agriculture
2nd Floor,
7000 - 113 Street
Edmonton, Alberta.
T6H 5T6

or Local Distric Home Economist

Home Planning and Design Fact Sheet Series

- Home Maintenance and Repairs
- Residential Air-to-Air Heat Exchanger
- Openings - window and door design in the home
- Exterior Finishing Materials
- How to measure and draw an existing house plan
- Home Insulation Techniques
- Resilient and Hard Floorcoverings
- Suggestions for the Home builder "contract basis"
- 1:50 Scale Cutouts for Home Planning
- Movable Window Insulation
- Upholstery Fabrics
- Window Decor
- Farm Home Plans for Alberta
- How to Read House Construction Drawings
- Alberta Housing Alternatives
- Louvered Window Treatments
- Interior Decorating Series

- Retrofit Project for a Farm Residence
- Solar Energy
- Energy Conservation in Home Design

Farm Home Planning Course

1 Remodelled Housing and the Site
2 Financing and Assessing the Existing Structure
3 Remodelled Home Planning
4 Exterior Design and Finishing Materials
5 Remodelled Home Construction
6 Systems in the Home
7 Interior Design and Finishing Materials
8 Planning Your Own Project

SOURCES FOR ENERGY CONSERVATION INFORMATION

Alberta Energy and Natural Resources

Energy Matters - a guide to efficient energy use in the home
Solar Energy Matters
Grants for Homeowners - an outline of assistance for energy-conservation renovations
How to Insulate Your Basement - Exterior Method
How to Insulate Your Basement - Interior Method

How to Weatherstrip and Caulk Your Home
Selecting a New Furnace
Your Home Energy Quiz
Your Home Heating System - Using it Efficiently
Energy-Efficient Housing - A Prairie Approach

Canada Mortgage Corporation
CHIP - Canadian Home Insulation Program
P.O. Box 700
St. Laurent Postal Station
Montreal, Quebec
H4L 5A8
Telephone 1-800-267-9563 (toll-free)

The Conservation of Energy in Housing
Order No. NHA 5149 81/02

Energy Efficient Housing Construction
Order No. NHA 5488 82/11

Call Ener$ave toll free HEATLINE 1-800-267-9563 for details or brochures or contact:

Conservation and Renewable Energy Office,
Energy, Mines and Resources Canada,
Sir Winston Churchill Avenue,
St. Albert, Alberta
T8N 1B4
Telephone: (403) 420-4085, 1-800-222-6477

Enerfacts Series

- Retrofitting Compact Roofs for Energy Conservation
- Purchasing an Energy-Efficient Gas Furnace
- Polystyrene
- Mineral Wool
- Improving the Energy Efficiency of Windows
- Heat Pumps
- Home Energy Conservation Checklist
- Caulking
- How to Detect and Seal Air Leaks
- How to Avoid Condensation
- Fire Safety and Attic Insulation
- Attic Ventilation
- Weatherstripping
- Your Guide to Saving and Comfort

- The Billpayer's Guide to Heating Systems
- Keeping the Heat In
- Still on Oil?
- Switching to Natural Gas
- Switching to Electricity
- Heating with Wood
- Solar Hot Water

SOURCES FOR INFORMATION ON RENOVATIONS

Available from your local CMHC office:

Aid for Home Repairs - outline of financial assistance programs
Order No. NHA 5717 83/11

Homeowners - Outline of RRAP
Order No. NHA 5405 83/02

How to Hire a Contractor
Order No. NHA 5429 04/83

New Life for an Old House
Order No. NHA 5628 12/82

Site Improvement of Older Housing
Order No. NHA 5602 83/02